

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

H21NM  
Revision 1  
Glacier Helicopter, Inc.  
CH-3E  
Revised January 24, 2005

TYPE CERTIFICATE DATA SHEET NO. H21NM

This data sheet, which is a part of the Type Certificate No. H21NM, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: **This Type Certificate (TC) has been designated as ABANDONED** (See Note 20)

Type Certificate Holder Record: Glacier Helicopter, Inc.  
3937 Williamson Way  
Bellingham, WA 98225

**I - Model CH-3E (Restricted Category Rotorcraft) Approved July 2, 1996.**

(See Note 4)

Engines (2) General Electric T58-GE-5; (2) General Electric T58-GE-100 or (2) General Electric CT58-140-1 (with Hamilton Standard Fuel control JFC-26).

Fuel Aviation Kerosene, JP4 or JP5.

Engine Limits Sea Level Static - Standard Day

	Torque (% Q)	Power Turbine Speed (% N <sub>f</sub> )	Gas Generator Speed (% N <sub>g</sub> )	Power Turbine Inlet Temp. (T <sub>5</sub> )
Takeoff				
T58-GE-5 (5 Min.)	103%	112%	102.7%	721° C
T58-GE-100 (10 Min.)	103%	112%	103.4%	745° C
CT58-140-1 (5 Min.)	103%	112%	100.0%	696° C
(See Note 16)				
One Engine Inoperative				
T58-GE-5 (30 min.)	123%	112%	102.7%	696° C
T58-GE-100 (30 min.)	123%	112%	103.4%	721° C
CT58-140-1 (30 Min.)	123%	112%	100.0%	696° C
One Engine Inoperative				
T58-GE-5 (5 Min.)	123%	112%	102.7%	721° C
T58-GE-100 (10 Min.)	123%	112%	103.4%	745° C
CT58-140-1 (2 1/2 Min.)	123%	112%	102.0%	721° C

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## Engine Limits (Continued)

## Sea Level Static - Standard Day

	Torque (% Q)	Power Turbine Speed (% N <sub>T</sub> )	Gas Generator Speed (% N <sub>G</sub> )	Power Turbine Inlet Temp. (T <sub>5</sub> )
Maximum Continuous (See Note 14)				
T58-GE-5	86%	112%	102.7%	660° C
T58-GE-100	86%	112%	103.4%	685° C
CT58-140-1	86%	112%	100.0%	660° C
Max. Transient (2 Sec.)	NA	NA	NA	840° C
Starting (2 Sec.)	NA	NA	NA	950° C
Allowable Max. Overspeed (15 Sec.)				
T58-GE-5	(See Note 15)	123%	106.0%	NA
T58-GE-100	(See Note 15)	123%	106.0%	NA
CT58-140-1	(See Note 15)	123%	105.0%	NA

The use of engine Model CT-58-140-1 is permitted only when main gear box P/N S6137-23000-19 is installed, and left engine cowl, P/N S6130-80142, is modified for increased cooling provisions per Sikorsky E.O. No. 65718. Refer to Rotorcraft Flight Manual for use of engine inlet duct P/N S6130-80179 with oil tank mounting ring P/N S6132-80205.

## Rotor Limits

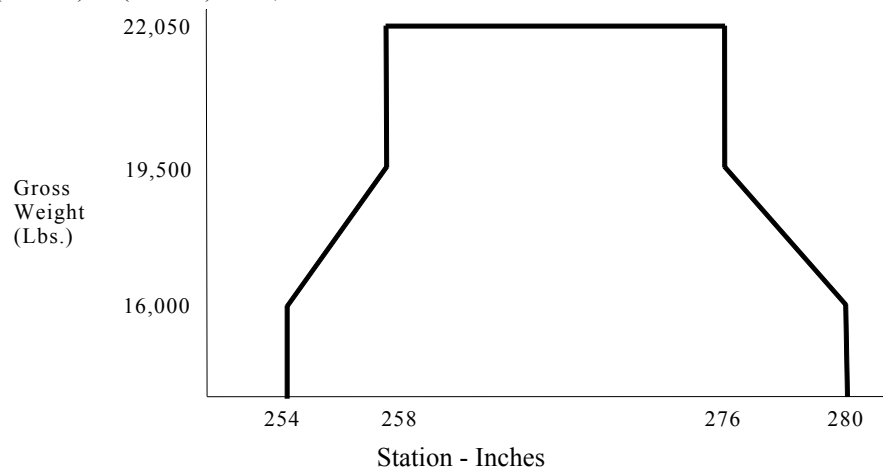
Max. 225 r.p.m. (112%)  
Min. 184 r.p.m. (91%)

## Airspeed Limits

V<sub>ne</sub> (Never exceed) speed 165 m.p.h. (142 knots) CAS.

## C.G. Range

(+258.0) to (+276.0) at 19,500 lbs. to 22,050 lbs.  
(+254.0) to (+280.0) at 16,000 lbs. or less.



## Empty Weight C.G. Range

None

Datum	267.4 in. forward of main rotor centroid.
Leveling Means	Leveling plates on sill and upper frame of forward door.
Maximum Weight	19,500 lbs. (See Note 19)
Minimum Crew	2 (pilot and copilot).
Number of Seats	3 - 2 at (+ 99.1), 1 at (+ 129.0).
Maximum Cargo	See Note 18.
Fuel Capacity	667 gal. (333 gal. at 215.3, 334 gal. at 317.3).
Oil Capacity	5.0 gal. (2 tanks 2.5 gal. each at 181.0).
Rotor Blade & Control Movements	For rigging information, see Note 3.
Serial No. Eligible	69-5805
Certification Basis	<p>FAR 21.25(a)(2) effective February 1, 1965, including Amendments 21-1 through 21-71. Type Certificate No. H21NM for the Special Purpose(s) of:</p> <p>(1) Agricultural Operations under FAR 21.25 (b) (1)..</p> <p>Note: In accordance with FAR 36.1 (a) (4), compliance with the noise requirements was not shown. Therefore, aircraft certificated under this type certificate are only eligible for agricultural operations excepted by FAR 36.1 (a) (4) and defined under FAR 137.3</p> <p>(2) Forest and Wildlife Conservation Operations under FAR 21.25 (b) (2).</p> <p>Note: In accordance with FAR 36.1 (a) (4), compliance with the noise requirements was not shown. Therefore, aircraft certificated under this type certificate are only eligible for dispensing fire fighting materials excepted by FAR 36.1 (a) (4) and defined under FAR 137.3</p> <p>(3) External Load Operations under FAR 21.25 (b) (7).</p> <p>Note: In accordance with FAR 36.1 (a) (4), compliance with the noise requirements was not shown. Therefore, aircraft certificated under this type certificate are only eligible for excepted by FAR 36.1 (a) (4) and defined under FAR 133.1 (b).</p> <p>General Note: Any alteration to the aircraft for Special Purposes not identified above require further FAA approval and in addition may require noise and / or flight testing.</p>
Production Basis	None. Prior to certification of each aircraft, a FAA representative must perform a detailed inspection for workmanship, materials, and conformity with approved technical data.

Equipment                      The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the helicopter for certification. In addition , equipment necessary for the particular special purpose must be installed.

#### NOTES

NOTE 1.                      A current weight and balance report including a list of equipment included in the certificated empty weight, and loading instructions specified in USAF T.O. No. 1H-3(C)E-5, through Change 8 dated November 1988 or later FAA approved revisions, must be in each helicopter at the time of original airworthiness certification and at all times thereafter.

NOTE 2.                      The following placards must be prominently displayed in the cockpit in full view of the pilots, in accordance with drawing GHI 61001.

"THIS ROTORCRAFT MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE APPROVED ROTORCRAFT FLIGHT MANUAL AND THE RESTRICTED CATEGORY OPERATING LIMITATIONS OF FAR 91.313."

"VFR OPERATIONS ONLY."

The builder's data plate required by FAR 45.13 must be installed in accordance with drawing GHI 61002.

NOTE 3.                      The helicopter(s) must be serviced, maintained and inspected in accordance with the documents specified in Glacier Helicopter Inc. Instructions for Continued Airworthiness Maintenance Report CH-3E, No. GHI 61004, dated February 29, 1996, or other FAA accepted inspection programs. The TC holder's Instructions for Continued Airworthiness report is part of the TC holder's Instructions for Continued Airworthiness.

NOTE 4.                      Prior to obtaining an original Airworthiness Certificate:

- (1)       Each helicopter must satisfactorily pass a conformity inspection in accordance with Glacier Helicopter, Inc. Engineering Report No. GHI 61003, dated February 29, 1996 or later FAA approved revision. The Engineering Report must contain a complete description of each helicopter, any military Time Compliance Technical Orders accomplished on that particular helicopter, and a description of the Special Purpose modification(s) accomplished on that particular helicopter.
- (2)       The maintenance, overhaul and modification records of each helicopter must be reviewed for changes made by the military that may affect the airworthiness of the helicopter.
- (3)       After the required inspections, the aircraft must be found to be in a good state of preservation, repair, and in a condition for safe operation.

- NOTE 5. The helicopter must be operated in accordance with a Flight Manual comprised of the following:
- (1) Department of the Air Force Flight Manual No. TO 1H-3(C)E-1, "Flight Manual, USAF Series, CH-3E and HH-3E Helicopters", dated September 1, 1983, with Change 3, dated April 16, 1989.
  - (2) Glacier Helicopter, Inc. RFM Supplement # GHI 6101, "Operation USAF CH-3E Helicopters with CT58-140-1 Engines", dated March 15, 1996.
- NOTE 6. The service life limited parts overhaul and retirement intervals for these helicopters is specified in Glacier Helicopter, Inc. Life Limited Parts Report CH-3E, No. GHI 61005 dated February 29, 1996 or later FAA approved revisions.
- NOTE 7. Continued airworthiness of the USAF CH-3E helicopters eligible under this TCDS is contingent upon compliance with all applicable FAA Airworthiness Directives for the Sikorsky Model S61R helicopters, the General Electric CT-58 (Military Model T-58) engine, and any components installed thereon.
- NOTE 8. Certification Basis Note: "This type certificate approval applies to the basic helicopter only. Any alteration to the basic helicopter for a Special Purpose not identified herein require further FAA approval and in addition may require flight testing".
- NOTE 9. The Airworthiness Directives for the helicopter and engines contained in Glacier Helicopter, Inc. Engineering Report No. GHI 61003, dated February 29, 1996 or later FAA approved revisions, must be complied with prior to original airworthiness certification.
- NOTE 10. This aircraft is prohibited from carrying cargo for compensation or hire. Carriage of cargo is limited to such cargo that is incidental to the aircraft owner / operators business which is other than air transportation.
- NOTE 11. Restricted category aircraft may not be operated in a foreign country without the express written approval of that country.
- NOTE 12. This aircraft has not been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation.
- NOTE 13. Engine changes are allowed provided the replacement engine is of the same make and model as identified in this TCDS. The replacement engine must have appropriate records and have the applicable FAA Airworthiness inspections accomplished.
- NOTE 14. Maximum continuous total power for two-engine operation is limited to 2100 hp.
- NOTE 15. Torque may exceed 103 percent Q on one engine to a maximum of 123 percent, provided that the power of the other is reduced so that total torque for both engines does not exceed 206 percent Q for 30 minutes or 172 percent continuously, and that the single engine  $N_g$ ,  $T_5$  and Q limits are not exceeded. The governing parameter is the limit which occurs first.

- NOTE 16. If takeoff power (CT58-140-1) is used in cumulative excess of 5 minutes during any one emergency, the engine must be inspected in accordance with G.E. Commercial Maintenance Manual SEI-182, Revision 7 dated November 1, 1979 or later FAA approved revision
- NOTE 17. Use of the P/N 701222-2 or 701222-3 Fuel Control is permitted on T58-GE-100 engine in accordance with General Electric Customer Departure Record No. CT58-96-005.
- NOTE 18. Provisions for the carriage of external loads are available in the form of structural hard points on the fuselage and single point hook. Information concerning the operating limitations with this equipment is contained in the Flight Manual.
- NOTE 19. Maximum takeoff and landing weight is 19,500 lbs, except in rotorcraft-external load operations where the maximum rotorcraft-load combination weight is 22,050 pounds. The external load must be jettisonable so that the rotorcraft weight is not more than 19,500 pounds.
- NOTE 20. **This Type Certificate (TC) has been designated "ABANDONED".** A "Notice of Intent To Designate as Abandoned Certain Type Certificates Issued in the Restricted Category," was published by the Federal Aviation Administration (FAA) in the Federal Register on August 8, 2003 (68 FR 47379). That Notice listed this TC. The FAA received no comments on the published Notice. The FAA has been unable to contact this TC holder. Hence, the FAA has determined that this TC holder is not complying with its Continued Operational Safety (COS) responsibilities. Therefore, no additional aircraft will be added to this TC and no additional original airworthiness certificates will be issued based on this TC. The effectiveness of this TC is limited to those aircraft that received original airworthiness certification prior to the incorporation of this note (Date of Incorporation, January 24, 2005). Subsequently, if the TC holder is located and assumes their COS responsibilities, the restriction(s) imposed by this note may be lifted.

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